

We claim:

1. In a first communication station operable in a radio communication system in which multimedia information is communicated between the first communication station and a second communication station, an improvement of apparatus for converting packet-formatted data, of which
5 the multimedia information is formed, into a radio-link format, amenable for transmission upon a radio-link to the second communication station, said apparatus comprising:

a detector coupled to receive indications of the packet-formatted data, said detector for detecting control plane information associated with the
10 packet-formatted data;

a requester coupled to receive indications of detection by said detector of the control plane information, said requester for requesting allocation of a special channel defined when the radio-link extending between the first and second communication stations, respectively, for communication
15 of the multimedia information therebetween;

a format converter coupled to receive the packet-formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for converting the packet-formatted data into the radio-link format, thereafter to
20 permit transmission of the multimedia information, formatted in the radio-link format upon the special channel

2. The apparatus of claim 1 wherein the indications of the control plane information to which said detector is coupled to receive comprises indications of selective assignation-requests for logical channels upon which the generate the multimedia information.

3. The apparatus of claim 2 wherein the multimedia information comprises a first information-type and at least a second information-type, and wherein the indications of the selective assignation-requests comprises a

request for selective assignation of a first logical channel upon which to
5 generate the multimedia information of the first information-type.

4. The apparatus of claim 3 wherein the first information-type of the multimedia information comprises real-time media, such as conversational voice information.

5. The apparatus of claim 3 wherein the indications of the selective assignation-requests comprises a request for selective assignation of a second logical channel upon which to generate the multimedia information of the second information-type.

6. The apparatus of claim 5 wherein the second information-type of the multimedia information comprises non-real-time media..

7. The apparatus of claim 3 wherein the packet-formatted data of which the multimedia information is formed further comprises user plane information including the first information-type and at least the second information-type, the user plan information to be generated selectively upon
5 the first logical channel and at least the second logical channel subsequent to assignation of the first logical channel and at least the second logical channel requested.

8. The apparatus of claim 7 wherein the user plane information is formatted according to an RTP protocol.

9. The apparatus of claim 1 wherein the control plane information, indications of which are detected by said detector, is formatted according to an RTP protocol.

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10. The apparatus of claim 1 wherein the radio communication system comprises a TDMA (time-division, multiple-access) communication system in which time frames formed of groups of time slots are defined, wherein channels defined in the TDMA communication system are defined, at least in part, by a time slot allocation in successive ones of the time frames, and wherein the request by said requester for allocation of the special channel comprises a request for allocation of at least one selected time slot upon which to transmit the multimedia information.

11. The apparatus of claim 10 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into TDMA format for transmission upon the selected time slot subsequent to allocation responsive to the request by said requester.

12. The apparatus of claim 1 wherein the radio communication system comprises a CDMA (code-division, multiple-access) communication system. wherein channels defined in the CDMA communication system are defined by channel codes, and wherein the request by said requester for allocation of the special channel comprises a request for allocation of at least one selected channel code by which to encode the multimedia information.

13. The apparatus of claim 12 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into a coded signal encoded by the at least one channel code.

14. The apparatus of claim 1 wherein said detector, said requester, and said format converter form portions of an adaptation layer of the first communication station.

15. The apparatus of claim 14 wherein the second communication station further comprises an adaptation layer, a peer of the adaptation layer of the first communication station.

16. The apparatus of claim 15 wherein said adaptation layer of the second communication station is operable to convert the multimedia information, received at the second communication station in radio-link format, into packet-data format.

17. The apparatus of claim 16 wherein the radio communication system comprises a cellular radio communication system, wherein the first communication station comprises a first terminal coupled together with a mobile station and wherein said detector, said requester, and said format converter from portions of the mobile station.

18. The apparatus of claim 17 wherein the second communication station comprises a second terminal coupled together with network infrastructure of the cellular communication system, and wherein said adaptation layer of the second communication station is formed at the network infrastructure.

19. A wireless gateway for providing multimedia information transmitted thereto upon a special channel in radio-link format to a multimedia device, said wireless gateway comprising:

a control plane information generator coupled to receive indications of the multimedia information, said control plane information generator for generating control plane information, the control plane information controlling a manner by which to provide the multimedia information, once converted into packet-data form, to the multimedia device; and

a format converter coupled to receive indications of the multimedia information in the radio-link format, said format converter for converting the multimedia information into the packet-data form, the multimedia information, once converted into the packet-data form provided to

the multimedia device in the manner determined by the control plane
15 information.

20. A method for communicating multimedia information between a first communication station and a second communication station, of a radio communication system, said method comprising:

- 5 providing the multimedia information, in packet-data form, to the first communication station;
- detecting control plane information associated with the multimedia information provided during said operation of providing;
- requesting allocation of a special channel defined upon a radio-link between the first communication station and the second communication
10 station;
- converting the multimedia information, provided during said operation in packet-data form, into a radio-link format, amenable for transmission upon the special channel; and
- transmitting the multimedia information upon the special
15 channel to the second communication station.

21. Apparatus for a communication station operable in a communication system to communicate real-time media, said apparatus comprising:

- 5 a real-time media source at which the real-time media to be communication by the communication station is sourced;
- a detector coupled to receive indications when said real-time media source sources real-time media to be communicated by the communication station, said detector for detecting when the real-time media is to be communicated by the communication station; and
- 10 a requester coupled to receive indications of detection by said detector of real-time media to be communicated by the communication station,

said requester for requesting allocation of a special channel upon which to communicate the real-time media.

22. Apparatus for a communication station operable in a communication system to communicate real-time media upon a special channel allocated to the communication station to communicate the real-time media thereon, said apparatus comprising:

5 a real-time media source at which the real-time media to be communicated by the communication station is sourced;

a formatter coupled to receive the real-time media sourced by said real-time media source, said formatter for formatting the real-time media to form formatted media;

10 a converter coupled to said formatter to receive the formatted media, said converter for converting the formatted media into spectrally-efficient form for communication upon the special channel; and

a transmitter coupled to said converter to receive spectrally-efficient formed media formed by said transmitter, said transmitter for
15 transmitting the spectrally-efficient formed media upon the special channel.

23. Apparatus for a communication station operable in a communication system to communicate real-time media, said apparatus comprising:

5 a real-time media source at which the real-time media to be communicated by the communication station is sourced; and

a requester coupled to receive indications when said real-time media source sources real-time media to be communicated by the communication station. said requester for requesting allocation of a special channel upon which to communicate the real-time media.

24. Apparatus for a communication station operable in a communication system to communicate real-time media upon a special

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channel allocated to the communication station to communicate the real-time media thereon, said apparatus comprising:

5 a real-time media source at which the real-time media to be communicated by the communication station is sourced; and

 a transmitter coupled to said real-time media source to receive the real-time media sourced thereat, said transmitter for transmitting the real-time media upon the special channel.

25. Apparatus for access network infrastructure of a radio communication system operable to communicate real-time media therethrough with a first communication station, said apparatus comprising:

5 a special-channel-request detector for detecting a request by the remote station for allocation of a special channel upon which to communicate the real-time media, in spectrally-efficient form, thereon and for detecting formatting data associated with the real-time media; and

 a special channel allocator operable at least responsive to detection by said special-channel-request detector to allocate a special channel
10 upon which to communicate the real-time media.

26. The apparatus of claim 25 further comprising a formatter coupled to receive the formatting data and the real-time media, in the spectrally-efficient form, subsequent to transmission upon the special channel, said formatter for formatting the real-time media to form formatted media.

27. In a communication system having a first communication station operable at least to source real-time media in a selected format, an improvement of a first upstream adaptor portion of a first adaptor for adapting the real-time media formatted in the selected format to facilitate
5 communication of the real-time media upon a communication link, said first upstream adaptor portion of the first adaptor comprising:

 a first detector coupled to receive indications of the real-time media formatted in the selected format, said first detector for detecting

when the real-time media is to be communicated upon the communication
10 link; and

a first requester coupled to receive indications of
detection by said first detector of the real-time media to be communicated
upon the communication link, said first requester for requesting allocation of a
first special channel upon which to communicate the real-time media upon the
15 communication link.

28. The first upstream adaptor portion of the first adaptor of claim
27 wherein said first detector and said first requester comprise portions of a
control-plane adaptation layer.

29. The first upstream adaptor portion of the first adaptor of claim
27 further comprising a first converter coupled to receive the real-time media
formatted in the selected format, said first converter for converting the real-
time media formatted in the selected format into spectrally-efficient form for
5 communication upon the first special channel.

30. The first upstream adaptor portion of the first adaptor of claim
29 wherein the selected format in which the real-time media sourced by the
first communication station is formatted into packets which include IP, UDP,
and RTP headers, and wherein the spectrally-efficient form into which said
5 first converter converts the real-time media comprises a real-time media
stream having a timing defined by time stamps and sequence numbers taken
from the RTP headers of the packets of the real-time media.

31. In the communication system of claim 30 a further improvement
of a first downstream adaptor portion of a second adaptor for adapting the
real-time media, communicated in the spectrally-efficient form upon the first
special channel upon the communication link, to be formatted back into the
5 selected format, said first downstream adaptor portion of the second adaptor
comprising:

10 a first reconverter coupled to receive the real-time media communicated upon the special channel of the communication link, said first reconverter for converting the real-time media into formatted form, formatted pursuant to the selected format.

32. The first downstream adaptor portion of the second adaptor of claim 31 wherein said first reconverter comprises a regenerator for regenerating the real-time media formatted into the packets which include the IP, UDP, and RTP headers.

33. In the communication system of claim 32 further comprising a second communication station also operable at least to source real-time media in the selected format, a further improvement of a second upstream adaptor portion of the second adaptor for adapting the real-time media sourced by the
5 second communication station, said second upstream adaptor portion of said second adaptor comprising:

a second detector coupled to receive indications of the real-time media sourced by the second communication station, said second detector for detecting when the real-time media sourced by the second
10 communication station is to be communicated upon the communication link; and

a second requester coupled to receive indications of detection by said second detector of the real-time media sourced by the second communication station, said second requester for requesting allocation of a
15 second special channel upon which to communicate the real-time media sourced by the second communication station upon the communication link.

34. The second upstream adaptor portion of said second adaptor of claim 33 further comprising a second converter coupled to receive the real-time media sourced by the second communication station, said second converter for converting the real-time media sourced by the second

- 5 communication station into spectrally-efficient form for communication upon the second special channel.

35. In the communication system of claim 34, a further improvement of a second downstream adaptor portion of the first adaptor for adapting the real-time media, sourced by the second communication station and communicated in the spectrally-efficient form upon the second special
5 channel, to be formatted back into the selected format, said second downstream adaptor portion having a second reconverter coupled to receive the real-time media communicated upon the second special channel, said second reconverter for converting the real-time media into formatted form, formatted pursuant to the selected format.

36. In the communication system of claim 27 a further improvement of a second upstream adaptor portion of a second adaptor also for adapting the real-time media sourced by the first communication station and formatted in the selected format, a mobile station selectably connectable by way of the
5 communication link with a selected one of the first adaptor and the second adaptor, and wherein format information related to the real-time media is transferable between the first adaptor and the second adaptor.

37. A method for adapting real-time media, formatted in a selected format and sourced at a first communication station operable in a communication system, to facilitate communication of the real-time media upon a communication link, said method comprising:
5 detecting when the real-time media is to be communicated upon the communication link; and
requesting allocation of a first special channel upon which to communicate the real-time media upon the communication link.

38. The method of claim 36 further comprising the additional operations of:

converting the real-time media sourced by the first communication station into spectrally-efficient form; and

5 transmitting the real-time media, once converted during said operation of converting, upon the special channel.

39. In a communication system where multimedia information is transferred from a multimedia source to a multimedia sink, and a communications link is established on the path from the source to the sink, an apparatus for converting packet-formatted data, of which the multimedia
5 information is formed, into a communications-link format, amenable for transmission upon a communications-link, and for converting the communications-link-formatted multimedia data back into packet-formatted data for delivery to the sink, said apparatus comprising an upstream adaptor and a downstream adaptor; the upstream adaptor comprising :

10 - a detector for detecting when the source intends to start a real-time media session, and when the real-time session is to be terminated;

- a requester coupled to receive indications of session start by said detector, said requester for requesting allocation of a special channel upon which to communicate the real-time media upon the communications -
15 link; the requester also requests deallocation of the special channel previously allocated, upon indications of session termination by said detector;

- a format converter coupled to receive the packet-formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for
20 converting the packet-formatted data into the communications -link format, thereafter to permit transmission of the multimedia information, formatted in the communications -link format upon the special channel; and

the downstream adaptor comprising:

25 -a real-time manager to process the special channel allocation and deallocation request from the requester, and grant and release the special channel respectively

-a downstream format converter coupled to receive the communications -link formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester.
30 said format converter for converting the communications -link-formatted data into the packet format, thereafter to permit delivery of the multimedia information to the sink in packet format.

40. The apparatus of claim 39 wherein the application signaling protocol is such that the detector can detect the occurrence of selective assignation-requests and deassignation requests for logical channels upon which to carry real-time media.

41. The apparatus of claim 40 wherein the application signaling protocol is H.245, and the detector detects the occurrence of a real-time media logical channel opening and closing.

42. The apparatus of claim 39 where the upstream adaptor needs to send the IP and UDP header values only at special channel allocation time; the downstream adaptor regenerates the IP and UDP headers for each of the subsequent packets by retrieving locally stored values, previously sent by the
5 upstream adaptor at special channel allocation time.

43. The apparatus of claim 39 wherein the packet format of real-time media in the user plane includes headers containing timestamps and sequence numbers.

44. The apparatus of claim 43 where the upstream format converter generates a real-time media stream with the timing defined by the time stamps and sequence numbers received, and the special channel is such that the timing is preserved when received at the downstream converter.

45. The apparatus of claim 44 where the upstream adaptor needs to send the initial time stamps and sequence numbers only at special channel allocation time; the downstream adaptor subsequently regenerates the current time stamp and sequence number for each of the packets by using the initial values and the output of a local clock that increments monotonically and linearly in time.

46. The apparatus of claim 45 where the upstream adaptor updates the downstream adaptor with new relevant values whenever the parameters that drive the determination of the time stamps and sequence numbers have changed; an example of such parameters is the frequency of the clock to be used at the downstream adaptor.

47. The apparatus of claim 46 wherein the real-time media in the user plane is formatted according to the RTP protocol; timestamps and sequence numbers are RTP timestamps and RTP sequence numbers.

48. The apparatus of claim 39 wherein the packet format of real-time media in the user plane includes headers containing parameters other than timestamps and sequence numbers; these parameters varying more slowly than timestamps and sequence numbers.

49. The apparatus of claim 48 where the downstream adaptor regenerates more slowly varying parameters by retrieving locally stored values, previously sent by the upstream adaptor at special channel allocation time, and updated by the upstream adaptor whenever the values change.

50. The apparatus of claim 49 wherein the real-time media in the user plane is formatted according to the RTP protocol; more slowly varying parameters include the SSRC.

51. The apparatus of claim 39 wherein the communications link is a TDMA (time-division, multiple-access) radio link in which time frames

formed of groups of time slots are defined, wherein channels defined in the TDMA communication system are defined, at least in part, by a time slot
 5 allocation in successive ones of the time frames; and wherein the request by said requester for allocation of the special channel comprises a request for allocation of at least one selected time slot upon which to transmit the multimedia information.

52. The apparatus of claim 51 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into TDMA format for transmission upon the selected time slot subsequent to allocation responsive to the request by said requester.

53. The apparatus of claim 39 wherein the communications link is a CDMA (code-division, multiple-access) radio link, wherein channels defined in the CDMA communication system are defined by channel codes, and wherein the request by said requester for allocation of the special channel
 5 comprises a request for allocation of at least one selected channel code by which to encode the multimedia information.

54. The apparatus of claim 53 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into a coded signal encoded by the at least one channel code.

55. The apparatus of claim 39 where a special channel carrying real-time media can be multiplexed with other special channels carrying real-time media and/or other types of channels.

56. The apparatus of claim 55 where it is not required to send additional header information to identify a special channel; a special channel can be identified by a TDMA time slot or a CDMA channel code.

57. The apparatus of claim 56 where a dedicated TDMA time slot or dedicated CDMA channel code provides low and constant delay for real-time media.

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58. In a communication system where multimedia information is transferred between a multimedia mobile station, consisting of a multimedia device and an MS adaptor, and a multimedia remote terminal, an apparatus for converting packet-formatted data, of which the multimedia information is formed, into a radio-link format, amenable for transmission upon a radio -link, and for converting the radio -link-formatted multimedia data back into packet-formatted data for delivery to the terminal and mobile station, said apparatus comprising a mobile station (MS) adaptor and a access network infrastructure (ANI) adaptor; the MS adaptor comprising :

- 10 - a detector for detecting when the MS or remote terminal intends to start a real-time media session, and when the real-time session is to be terminated; the session can be for mobile originated, mobile terminated or both mobile originated and mobile terminated multimedia;
- a requester coupled to receive indications of session start by said detector, said requester for requesting allocation of a special channel upon which to communicate the real-time media upon the radio -link; the requester also requests deallocation of the special channel previously allocated, upon indications of session termination by said detector;
- a format converter coupled to receive the mobile originated packet-formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for converting the packet-formatted data into the radio -link format, thereafter to permit transmission of the multimedia information, formatted in the radio -link format upon the special channel; said format converter also coupled to receive the mobile terminated radio-link formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for converting the radio -link-formatted data into the packet format, thereafter to permit delivery of the multimedia information to the mobile
- 30 multimedia device in packet format

the ANI adaptor comprising:

-a real-time manager to process the special channel allocation and deallocation request from the requester, and grant and release the special channel respectively

35 -an ANI format converter coupled to receive the mobile originated radio-link formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for converting the radio-link-formatted data into the packet format, thereafter to permit delivery of the multimedia information to
40 the remote terminal in packet format; said format converter also coupled to receive the mobile terminated packet formatted data of which the multimedia information is formed, and responsive to allocation of the special channel requested by said requester, said format converter for converting the packet-formatted data into the radio-link format, thereafter to permit delivery of the
45 multimedia information over the radio link.

59. The apparatus of claim 58 where the MS adaptor is non-integrated with the multimedia device, and the multimedia device can be of conventional construction; that is, it can execute standard multimedia protocol software, that does not have to be altered to account for the radio link.

60. The apparatus of claim 59 where the standard multimedia protocol can be H.323.

61. The apparatus of claim 59 wherein the application signaling protocol is such that the detector can detect the occurrence of selective assignation-requests and deassignation requests for logical channels upon which to carry real-time media.

62. The apparatus of claim 61 wherein the application signaling protocol is H.245, and the detector detects the occurrence of a real-time media logical channel opening and closing.

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63. The apparatus of claim 59 where the ANI adaptor needs to send the IP and UDP header values only at special channel allocation time; the MS adaptor subsequently regenerates the IP and UDP headers of each of the packets for mobile terminated multimedia by retrieving locally stored values, previously sent by the ANI adaptor at special channel allocation time.

64. The apparatus of claim 59 where the MS adaptor needs to send the IP and UDP header values only at special channel allocation time; the ANI adaptor subsequently regenerates the IP and UDP headers of each of the packets for mobile terminated multimedia by retrieving locally stored values, previously sent by the MS adaptor at special channel allocation time.

65. The apparatus of claim 64 where the MS adaptor, upon determining that a handoff to a new ANI adaptor has occurred, sends the IP and UDP headers for mobile originated multimedia to the new ANI adaptor. The new ANI adaptor locally stores the values and retrieves them to regenerate IP and UDP headers of subsequent packets for mobile originated multimedia.

66. The apparatus of claim 59 wherein the packet format of real-time media in the user plane includes headers containing timestamps and sequence numbers.

67. The apparatus of claim 66 where the MS and ANI format converter generates a real-time media stream with the timing defined by the time stamps and sequence numbers received, and the special channel is such that the timing is preserved when received at the ANI and MS converter respectively.

68. The apparatus of claim 67 where the ANI adaptor needs to send the initial time stamps and sequence numbers only at special channel allocation time; the MS adaptor subsequently regenerates the current time stamp and sequence number for each of the packets by using the initial values

5 and the output of a local clock that increments monotonically and linearly in time.

69. The apparatus of claim 68 where the ANI adaptor updates the MS adaptor with new relevant values whenever the parameters that drive the determination of the time stamps and sequence numbers have changed; an example of such parameters is the frequency of the clock to be used at the MS
5 adaptor.

70. The apparatus of claim 69 wherein the real-time media in the user plane is formatted according to the RTP protocol; timestamps and sequence numbers are RTP timestamps and RTP sequence numbers.

71. The apparatus of claim 67 where the MS adaptor needs to send the initial time stamps and sequence numbers only at special channel allocation time; the ANI adaptor subsequently regenerates the current time stamp and sequence number for each of the packets by using the initial values
5 and the output of a local clock that increments monotonically and linearly in time.

72. The apparatus of claim 71 where the MS adaptor updates the ANI adaptor with new relevant values whenever the parameters that drive the determination of the time stamps and sequence numbers have changed; an example of such parameters is the frequency of the clock to be used at the ANI
5 adaptor.

73. The apparatus of claim 72 wherein the real-time media in the user plane is formatted according to the RTP protocol; timestamps and sequence numbers are RTP timestamps and RTP sequence numbers.

74. The apparatus of claim 67 where the MS adaptor, upon determining that a handoff to a new ANI adaptor has occurred, sends the current value of the time stamp and sequence number for mobile originated multimedia to the new ANI adaptor.

75. The apparatus of claim 74 where the ANI adaptor regenerates packet format headers for mobile originated multimedia by calculating the time stamps and sequence numbers from the values sent by the MS adaptor at handoff time, and from a local clock that increments monotonically and
5 linearly in time.

76. The apparatus of claim 59 wherein the radio communication system comprises a TDMA (time-division, multiple-access) communication system in which time frames formed of groups of time slots are defined, wherein channels defined in the TDMA communication system are defined, at
5 least in part, by a time slot allocation in successive ones of the time frames, and wherein the request by said requester for allocation of the special channel comprises a request for allocation of at least one selected time slot upon which to transmit the multimedia information.

77. The apparatus of claim 76 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into TDMA format for transmission upon the selected time slot subsequent to allocation responsive to the request by said requester.

78. The apparatus of claim 59 wherein the radio communication system comprises a CDMA (code-division, multiple-access) communication system, wherein channels defined in the CDMA communication system are defined by channel codes, and wherein the request by said requester for
5 allocation of the special channel comprises a request for allocation of at least one selected channel code by which to encode the multimedia information.

79. The apparatus of claim 78 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into a coded signal encoded by the at least one channel code.

80. The apparatus of claim 59 wherein the packet format of real-time media in the user plane includes headers containing parameters other than

timestamps and sequence numbers; these parameters varying more slowly than timestamps and sequence numbers.

81. The apparatus of claim 80 where the MS adaptor regenerates more slowly varying parameters by retrieving locally stored values, previously sent by the ANI adaptor at special channel allocation time, and updated by the ANI adaptor whenever the values change.

82. The apparatus of claim 81 wherein the real-time media in the user plane is formatted according to the RTP protocol; more slowly varying parameters include the SSRC.

83. The apparatus of claim 80 where the ANI adaptor regenerates more slowly varying parameters by retrieving locally stored values, previously sent by the MS adaptor at special channel allocation time, and updated by the MS adaptor whenever the values change.

84. The apparatus of claim 83 wherein the real-time media in the user plane is formatted according to the RTP protocol; more slowly varying parameters include the SSRC.

85. The apparatus of claim 59 where a special channel carrying real-time media can be multiplexed with other special channels carrying real-time media and/or other types of channels.

86. The apparatus of claim 85 where it is not required to send additional header information to identify a special channel; a special channel can be identified by a TDMA time slot or a CDMA channel code.

87. The apparatus of claim 86 where a dedicated TDMA time slot or dedicated CDMA channel code provides low and constant delay for real-time media.

88. The apparatus of claim 58 where the multimedia device is integrated with the MS adaptor.

89. The apparatus of claim 88 wherein the application signaling protocol is such that the detector can detect the occurrence of selective assignation-requests and deassignation requests for logical channels upon which to carry real-time media.

90. The apparatus of claim 89 wherein the application signaling protocol is H.245, and the detector detects the occurrence of a real-time media logical channel opening and closing.

91. The apparatus of claim 88 where the MS adaptor needs to send the IP and UDP header values only at special channel allocation time; the ANI adaptor subsequently regenerates the IP and UDP headers of each of the packets for mobile terminated multimedia by retrieving locally stored values,
5 previously sent by the MS adaptor at special channel allocation time.

92. The apparatus of claim 91 where the MS adaptor, upon determining that a handoff to a new ANI adaptor has occurred, sends the IP and UDP headers for mobile originated multimedia to the new ANI adaptor. The new ANI adaptor locally stores the values and retrieves them to
5 regenerate IP and UDP headers for mobile originated multimedia.

93. The apparatus of claim 88 wherein the packet format of real-time media in the user plane includes headers containing timestamps and sequence numbers.

94. The apparatus of claim 93 where the MS and ANI format converter generates a real-time media stream with the timing defined by the time stamps and sequence numbers received, and the special channel is such that the timing is preserved when received at the ANI and MS converter
5 respectively.

95. The apparatus of claim 94 where the MS adaptor needs to send the initial time stamps and sequence numbers only at special channel

allocation time; the ANI adaptor subsequently regenerates the current time stamp and sequence number for each of the packets by using the initial values and the output of a local clock that increments monotonically and linearly in time.

96. The apparatus of claim 95 where the MS adaptor updates the ANI adaptor with new relevant values whenever the parameters that drive the determination of the time stamps and sequence numbers have changed; an example of such parameters is the frequency of the clock to be used at the ANI adaptor.

97. The apparatus of claim 96 wherein the real-time media in the user plane is formatted according to the RTP protocol; timestamps and sequence numbers are RTP timestamps and RTP sequence numbers.

98. The apparatus of claim 94 where the MS adaptor, upon determining that a handoff to a new ANI adaptor has occurred, sends the current value of the time stamp and sequence number for mobile originated multimedia to the new ANI adaptor.

99. The apparatus of claim 98 where the ANI adaptor regenerates packet format headers for mobile originated multimedia by calculating the time stamps and sequence numbers from the values sent by the MS adaptor at handoff time, and from a local clock that increments monotonically and linearly in time.

100. The apparatus of claim 88 wherein the radio communication system comprises a TDMA (time-division, multiple-access) communication system in which time frames formed of groups of time slots are defined, wherein channels defined in the TDMA communication system are defined, at least in part, by a time slot allocation in successive ones of the time frames, and wherein the request by said requester for allocation of the special channel

comprises a request for allocation of at least one selected time slot upon which to transmit the multimedia information.

101. The apparatus of claim 100 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into TDMA format for transmission upon the selected time slot subsequent to allocation responsive to the request by said requester.

102. The apparatus of claim 88 wherein the radio communication system comprises a CDMA (code-division, multiple-access) communication system, wherein channels defined in the CDMA communication system are defined by channel codes, and wherein the request by said requester for
5 allocation of the special channel comprises a request for allocation of at least one selected channel code by which to encode the multimedia information.

103. The apparatus of claim 102 wherein said format converter converts the packet-formatted data of which the multimedia information is formed into a coded signal encoded by the at least one channel code.

104. The apparatus of claim 88 wherein the packet format of real-time media in the user plane includes headers containing parameters other than timestamps and sequence numbers; these parameters varying more slowly than timestamps and sequence numbers.

105. The apparatus of claim 104 where the ANI adaptor regenerates more slowly varying parameters by retrieving locally stored values, previously sent by the MS adaptor at special channel allocation time, and updated by the MS adaptor whenever the values change.

106. The apparatus of claim 88 wherein the real-time media in the user plane is formatted according to the RTP protocol; more slowly varying parameters include the SSRC.

107. The apparatus of claim 88 where a special channel carrying real-time media can be multiplexed with other special channels carrying real-time media and/or other types of channels.

108. The apparatus of claim 107 where it is not required to send additional header information to identify a special channel; a special channel can be identified by a TDMA time slot or a CDMA channel code.

109. The apparatus of claim 108 where a dedicated TDMA time slot to dedicated CDMA channel code provides low and constant delay for real-time media.